

Amendments to the Claims:

This listing of claims will replace all prior versions of claims in the application.

1. (Previously Presented) A method of thinning at least one silicon wafer, comprising the steps of:

placing the wafer into a process chamber;

forming an aqueous liquid layer on a surface of the wafer;

delivering ozone gas into the process chamber to oxidize a layer of silicon on the surface of the wafer; and

delivering HF into the process chamber, with the HF etching the oxidized silicon layer to decrease a thickness of the wafer.

2. (Currently Amended) The method of claim 1 wherein the HF comprises vapor and is delivered into the process chamber via a carrier gas including ozone.

3-6 (Cancelled).

7. (Original) The method of claim 2 further comprising the step of generating the HF vapor by bubbling the carrier gas through an HF solution contained in a vapor generator.

8. (Cancelled).

9. (Currently Amended) The method of claim 1 further comprising ~~the step of generating the~~ delivering HF into the process chamber by generating an HF vapor by mixing anhydrous HF gas with water vapor.

10. (Currently Amended) The method of claim 1 further comprising ~~the step of generating the~~ delivering HF into the process chamber by generating an HF vapor by bubbling anhydrous HF gas into water.

11. (Cancelled).

12. (Original) The method of claim 1 further comprising the step of removing the etched oxidized silicon from the process chamber via a system exhaust.

13. (Currently Amended) A method of thinning a silicon wafer, comprising the steps of:

placing the wafer into a process chamber;

delivering ozone gas into the process chamber to oxidize a layer of silicon on the wafer;

delivering HF into the process chamber;

spraying DI water onto a surface of the wafer with the HF;

dissolving the HF into the DI water on the wafer surface; and

etching the oxidized silicon layer with the dissolved HF to decrease a thickness of the wafer.

14. (Currently Amended) The method of claim 13 wherein HF comprises anhydrous HF gas and the anhydrous HF gas ~~are~~ is mixed with ~~one another~~ ozone before being delivered into the process chamber.

15. (Original) The method of claim 13 further comprising the step of forming a microscopic aqueous boundary layer on the surface of the wafer with the DI water.

16. (Original) The method of claim 15 further comprising the step of dissolving the ozone gas into the microscopic aqueous boundary layer.

17. (Original) The method of claim 13 further comprising the step of removing the etched oxidized silicon from the process chamber via a system exhaust.

18. (Original) The method of claim 13 further comprising the step of rinsing the wafer after the etching step is complete.

19. (Cancelled).

20. (Currently Amended) The method of claim ~~[[19]]~~ 1 wherein the HF is delivered into the process chamber in vapor form.

21. (Original) The method of claim 20 wherein the HF vapor is delivered into the process chamber via a carrier gas.

22. (Original) The method of claim 21 wherein the carrier gas comprises ozone.

23. (Original) The method of claim 20 wherein the removing step comprises exhausting the SiF<sub>4</sub> in vapor form from the process chamber.

24. (Currently Amended) The method of claim ~~[[19]]~~ 1 wherein the HF is delivered into the process chamber in aqueous form.

25. (Cancelled).

26. (Currently Amended) The method of claim ~~[[19]]~~ 1 wherein the ozone gas and the HF are mixed with one another before being delivered into the process chamber.

27. (Previously Presented) The method of claim 1 wherein the aqueous liquid layer is a microscopic layer.

28. (Previously Presented) The method of claim 1 wherein the aqueous liquid layer is a visible liquid layer.

29. (Previously Presented) The method of claim 1 wherein the HF comprises a vapor, an aqueous liquid, or an anhydrous gas.

30. (Previously Presented) The method of claim 1 further comprising the step of spinning the wafer.

31. (Previously Presented) The method of claim 13 further comprising spinning the wafer.

32. (Previously Presented) The method of claim 1 wherein a batch of wafers are placed in the process chamber.

33. (New) The method of claim 1 wherein the wafer is etched at more than about 100 nm/minute.

34. (New) The method of claim 1 wherein the wafer is etched at more than about 500 nm/minute.

35. (New) The method of claim 1 wherein the wafer thickness is reduced to about 50-100 microns.

36. (New) The method of claim 1 wherein the wafer thickness is reduced by at least 400 microns.

37. (New) The method of claim 1 wherein the HF forms hydrofluoric acid in the presence of the aqueous liquid.

38. (New) A method of thinning a wafer, comprising :  
spinning the wafer;  
forming an aqueous liquid layer on a surface of the wafer;  
contacting the aqueous liquid layer with an oxidizer to oxidize one or more layers of silicon on the wafer; and  
delivering hydrogen fluoride into the process chamber, with the hydrogen fluoride converting to hydrofluoric acid and etching the oxidized silicon layers to make the wafer thinner.

39. (New) The method of claim 38 wherein the aqueous liquid layer is macroscopic.

40. (New) The method of claim 38 wherein the wafer has a thickness that is reduced to 100 microns or less via the ozone and the oxidizer chemically reacting with the silicon wafer.

41. (New) The method of claim 38 wherein the silicon is etched at more than 500 nm/minute.